

Claims

1. A filter element which has a filter cylinder adjacent to a fluid-permeable support tube (15) through which filter cylinder the fluid to be filtered may flow from its interior and which is in the form of a filter mat web having a series of folds (9) adjacent to each other at least in individual areas and the two ends of which are connected to each other at a junction point (5) for formation of an annular element (1), characterized by a configuration effective at the junction point (5) in preventing bulging of the folds (9) in the area of the junction point (5) as a result of flow of fluid.
2. The filter element as claimed in claim 1, wherein a configuration preventing bulging in the area of the junction point (5) is formed in that the respective folds (9) of the filter mat web on the ends are joined to each other along the end edges which face the inside (3) of the annular element (1) to be formed, so that the two folds (9) adjoining the junction point (5) are positioned with their crowns (11) on the outside on the annular element (1) and facing the support tube (15).
3. The filter element as claimed in claim 2, wherein the filter mat web is in the form of a flexible mat structure of metal-free plastic-supported filter mats.
4. The filter element as claimed in claim 3, wherein the connection of the ends of the filter mat web is in the form of a fusion seam (5).
5. The filter element as claimed in claims 3 and 4, wherein the dimensions determined for the flexible filter mat web are such that, after formation of an exterior fusion seam (5) joining the filter mat web, the annular element (1) may be reversed so that the fusion seam (5) is in the interior on the reversed annular element (1).

6. The filter element as claimed in one of claims 1 to 5, wherein the configuration preventing bulging in the area of the junction point (5) has a retaining device which has retaining elements (23, 25), which overlap the adjacent folds (9) on both sides of the annular element (1) on the sides of such folds facing away from the junction point (5).
7. The filter element as claimed in claim 6, wherein the retaining elements are in the form of retaining projections (23, 25) which are configured to project radially inward on the inside of the support tube (15).
8. The filter element as claimed in claim 7, wherein the support tube (15) is configured as a transfer-molded plastic component with retaining projections (23, 25) of the retaining device integrated with it.
9. The filter element as claimed in claim 6, wherein the retaining elements are in the form of the legs of a clamping element (31) U-shaped in cross-section, it being possible to insert such clamping element onto the folds (9) adjacent to the junction point (5) of the annular element (1).
10. A process for production of a filter element as claimed in one of the preceding claims, characterized in that a filter cylinder adjoining a fluid-permeable support tube (15) is formed on the exterior of such filter element by joining together a flexible filter mat web having series of folds adjacent to each other at least in individual areas on its end edges to form an annular element (1) and joined along a junction point (5) positioned on the exterior of the annular element (1), and in that the annular element (1) formed is reversed so that the junction point (5) is in contact with it in the interior.